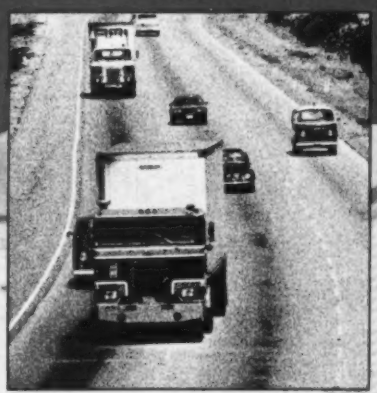
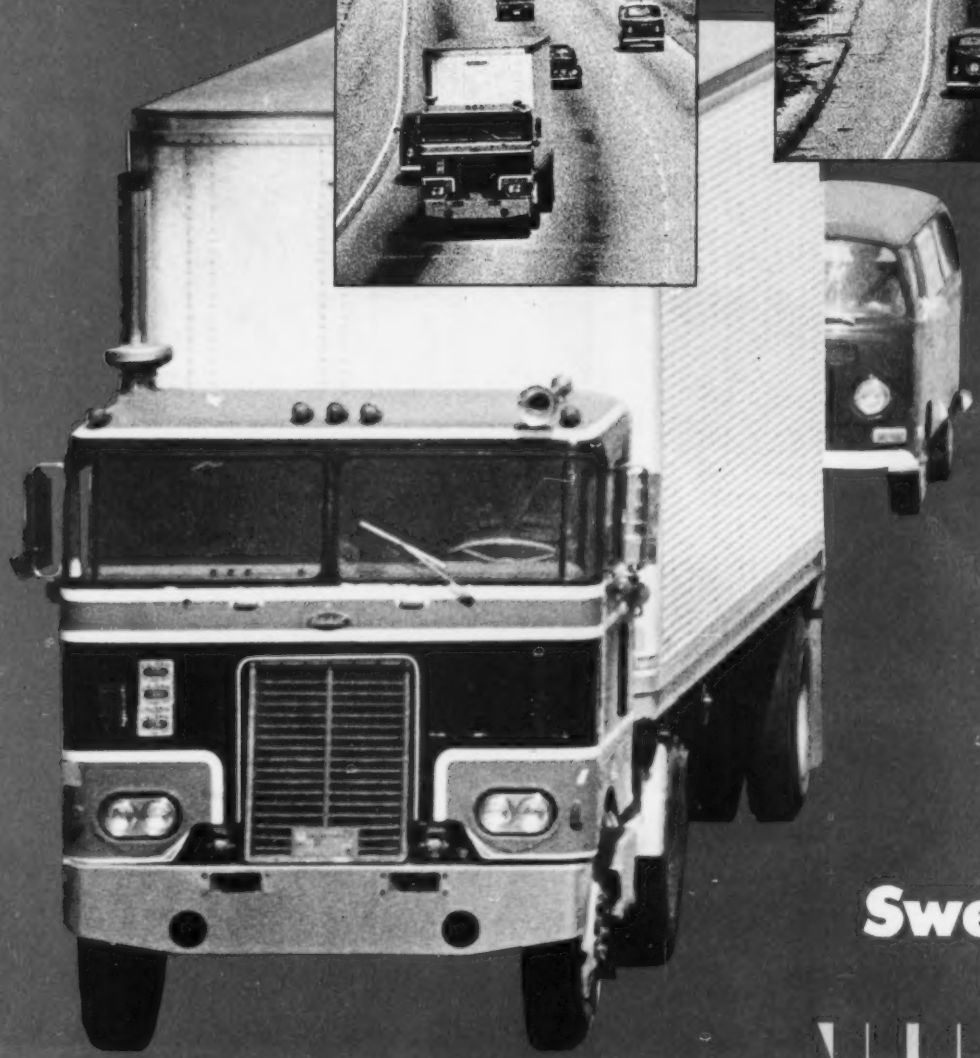
FEBRUARY 1982

DRIVER

Bits & PIECES II





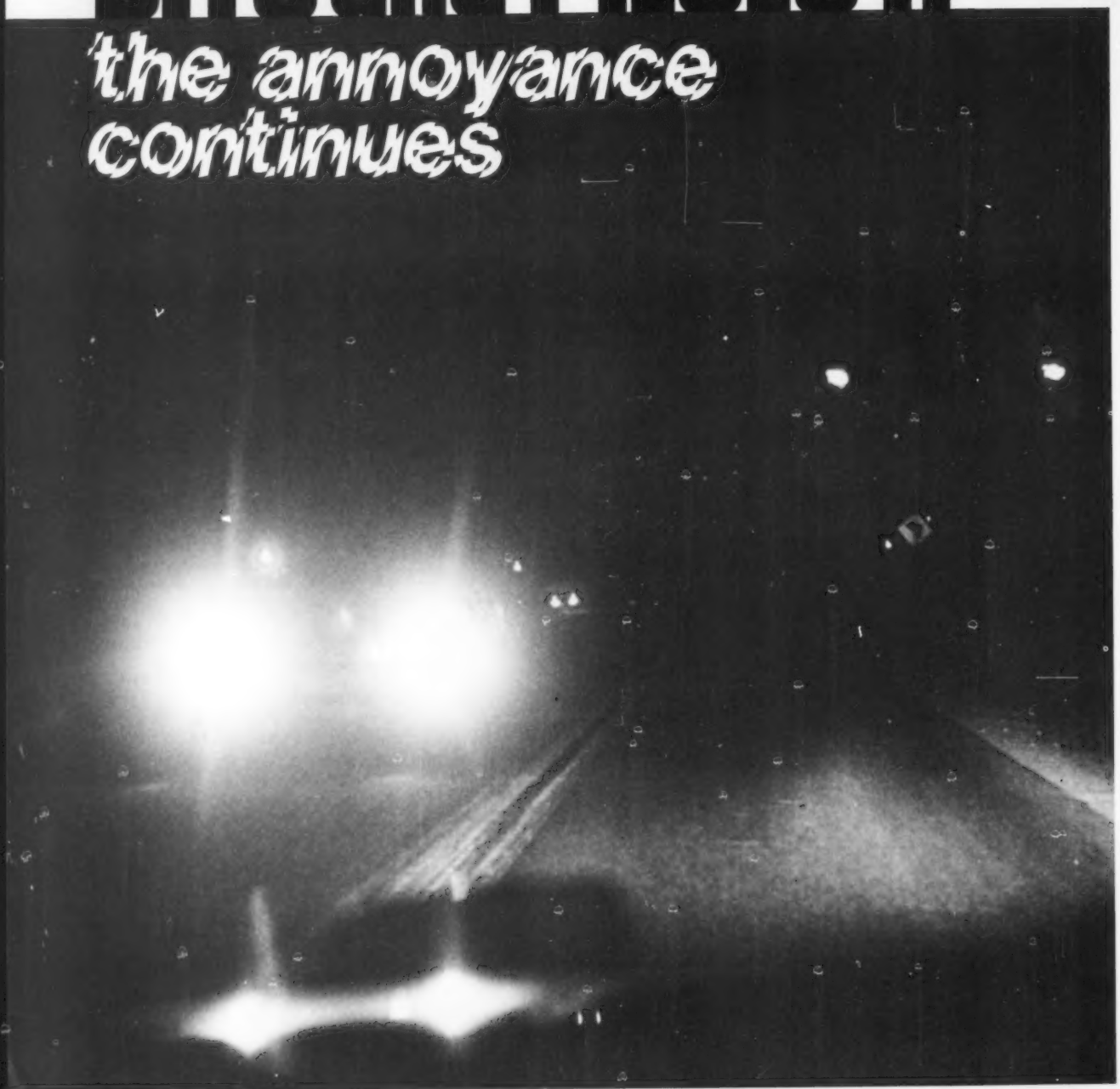
The Swear and Prayer

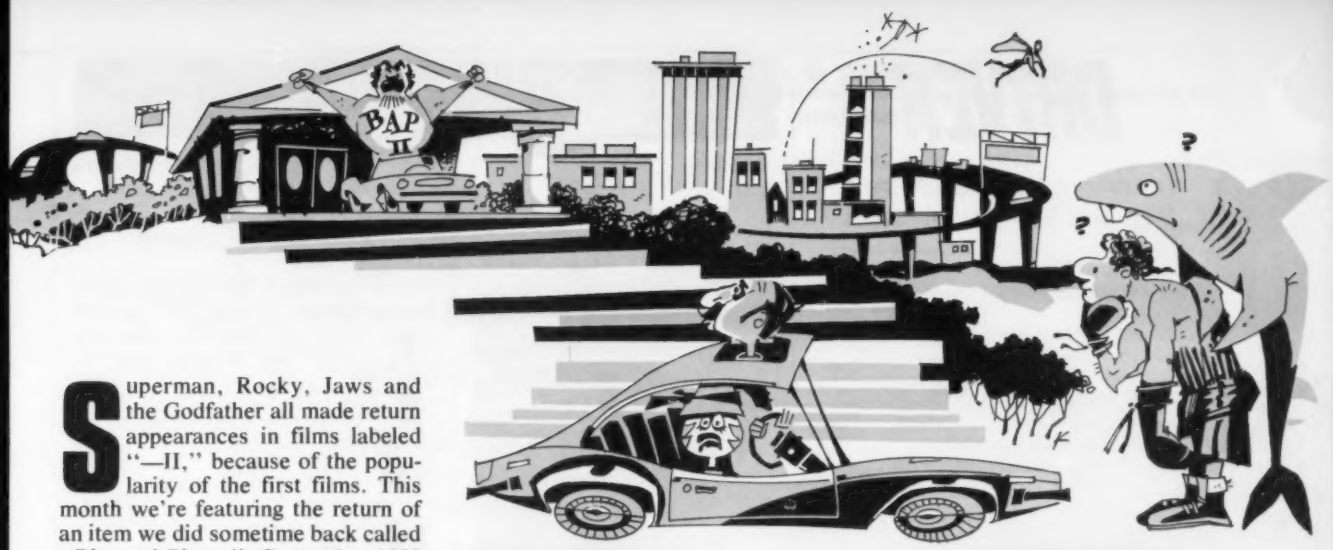
NURDS

DRiVER

BITS and PIECES II:

the annoyance continues





Superman, Rocky, Jaws and the Godfather all made return appearances in films labeled "—II," because of the popularity of the first films. This month we're featuring the return of an item we did sometime back called "Bits and Pieces" (September 1978 DRIVER) about drivers and their bad habits. We do this "sequel" not because these drivers are popular, but because they are annoying and dangerous, and because they just won't go away.

Since they won't go away, we have to deal with them — by being alert, by being ready to steer away from them or around them, or just ready to stop until the coast is clear.

Look out! Here they come!

People are so casual about driving that they treat it like it wasn't a hazardous activity. It is. This girl should let her passenger select the music, and she shouldn't be distracted by his conversation.

(right)
Outside things can also distract you from your driving. This guy acts as though he had never seen an airplane before. If you want to sky-watch, pull off the road.

(left)
Did you ever feel like cars with headlamps on high beam are in your lane coming straight at you? That's just an illusion, but the glare blindness and visual spots you get from these inconsiderate people aren't. Look toward the right road edge and sweep your eyes to the middle of your lane until they pass. Don't look at the brights.

continued

DRIVER

THE
TRAFFIC SAFETY MAGAZINE
FOR THE MILITARY DRIVER

DEPARTMENT OF THE AIR FORCE
HQ AIR FORCE INSPECTION AND SAFETY CENTER
Norton Air Force Base, California 92409

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FEB

VOLUME 15 NUMBER 9

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THE EDITOR SPEAKS

DOUBLE CLUTCH

TRAFFIC DEATH TOLL

What causes traffic deaths? Drunk driving. Widespread failure to use seat belts and other restraints. A mix of more smaller cars with larger trucks. Lagging highway maintenance. These are the chief causes for the continued high rate of traffic deaths on the nation's roads, a Department of Transportation report shows.

The Fatal Accident Reporting System (FARS) report for 1980 notes that 51,077 men, women and children were killed on streets and highways. Of this number, 4,960 were motorcycle riders.

The FARS report, an annual publication providing data gathered by the department's National Highway Traffic Safety Administration, says alcohol abuse on American roads has jumped dramatically since 1978 to the point where more than half of the fatally injured drivers who were tested for alcohol were drunk.

In fatal accidents where the driver was alone in the car, only three percent were known for sure to be using seat belts. Over 13,000 persons or almost half of all passenger car occupant fatalities in 1980 were occupants of compact and subcompact cars. Nearly 70 percent of all fatal accidents occurred on state, county, and local highways, traditionally not as well maintained as the Interstate System. Although there were 12 percent fewer heavy truck accidents in 1980, they still accounted for 4,000 fatal accidents.

Other statistics from the report show there were 62,939 drivers involved in crashes in which a person was killed. Of these, 38 percent of the drivers were under 25 years of age. This age group also accounts for approximately 52 percent of all motorcycle drivers involved in fatal accidents.

Fridays and Saturdays proved to be the worst days of the week for drivers to be on the road, and the hours 4 p.m. to 4 a.m. were the worst times.

bits & pieces II

continued

If you'll take a look at the speedometer, you'll see it doesn't match the number on that road sign. Not only is he speeding, but he's also approaching a residential area where parked cars and pedestrians will multiply the hazard. Traveling at the legal speed allows time to react to sudden dangers.

(above)
Imagine something in the path of this panel truck as it passes us on a curve. Perhaps a motorcycle, or a station wagon full of kids and pets. The truck driver didn't *know* there was nobody coming; he just took a *chance*. He won, but often this maneuver will cause a head-on collision, the most dangerous kind of accident.

(left)
Tailgaters are a pain in the gas tank. It's bad enough when they're just small autos.

continued

But tailgaters like this one can really interfere with your concentration. The best way to handle them is to get out of their way, by moving over if possible. Speeding up, like this car is doing, doesn't solve the problem, since the tailgater will only accelerate, too. They're always in a hurry.

(left)
Speeding in wet weather is more hazardous than at other times because posted limits are for dry roads. The speeder can easily hydroplane and lose control. Hydroplaning occurs when all or most of the weight of the car is supported by a film of water.

Wet weather creates other hazards. Some turkeys splash other cars as they go through puddles, obscuring the vision of the drivers. Drive slowly through puddles, and go around them if you can. Wet brakes will not stop your car.

Even dumber than splashing through puddles is driving through flooded areas. Flood waters have a strong current. If he gets washed off the road, wet brakes will be the least of his problems.

continued

Aw, he wouldn't do that, would he? Yep, he did. He had a clear lane he could call his own, but he turned into ours. He may have some reason for being in the left lane, but he should have allowed us to proceed first. This is really inconsiderate, and the faster the oncoming traffic, the dumber it becomes.

continued

The cars are parked diagonally on both sides in our direction, right? And there's no easy way for this guy to enter a parking space, right? So what's he doing driving the wrong way in the lot?

(left)
Some people like to keep to the left of the lane, and others like to hug the line on the right side. The truck driver is probably wondering what the sedan will do. He'd be wise to keep back and see if a lane change is imminent.

This truck probably has enough room to change lanes, but we still wouldn't want to be in the van. If the truck driver didn't see him, he could end up in the weeds. Always expect a truck to move into the right lane, since that's where they seem to like to travel, and give him all the room he needs.

continued

The DRIVER Squad

A Fantasy

There's another way we'd like to "deal with" these people. If we could, we'd like to organize a special, elite "DRIVER Squad," a group of enforcers dedicated to driving safety and good sense.

We would issue special "DRIVER Squad" badges and ticket books. The tickets would say "You have been stopped by an official member of the DRIVER Squad. For the violation listed below, you are ordered to attend a safe drivers' refresher course. Further violations will result in additional sessions in the course. No exceptions."

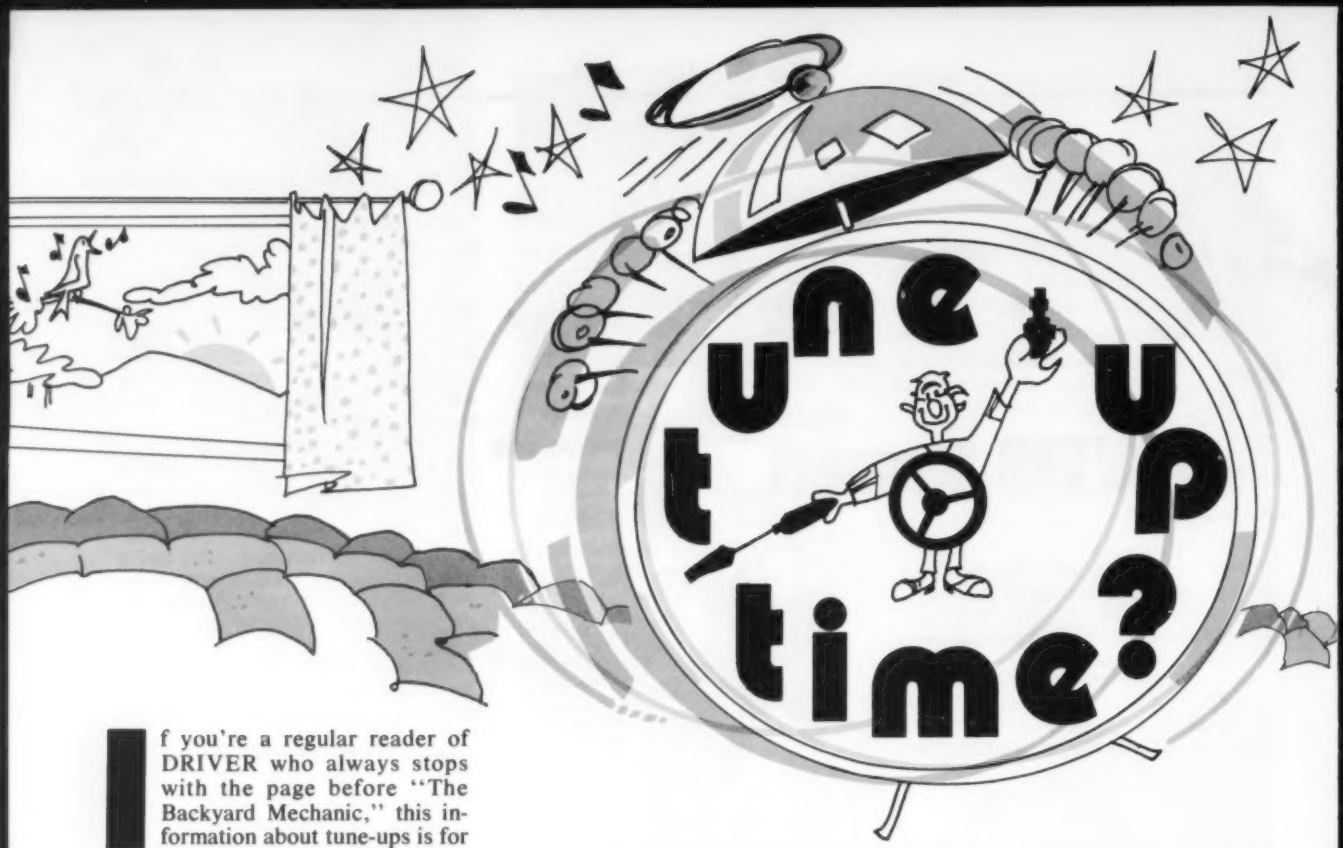
In the violation section of the ticket, the Squad member could write anything. Let your imagination go. "Driving too slowly while looking for a house number." "Driving one-handed while holding a burger and fries." "Ordinary rudeness." "Dangerous inconsiderateness."

Although we can't organize such a group, we can play a little mind game that relates to it. Try this: Whenever another driver does something stupid or illegal, pretend he was stopped by a patrolman. What should he have been cited for? It could be a speeding ticket, or a citation for being inconsiderate, or one for being stupid. Mentally fill in the blanks any way you want.

An extension of this game you might not like so well, but it's valuable. Every time *you* do something the authorities wouldn't like, imagine what *your* ticket would say.

That way, you can "deal with" yourself.

Ah, indecision. "Do I turn now? Do I have enough room? No, probably not. Well, maybe I do. I'm going." When he first got to the corner he had plenty of space for the turn before we got there, but by the time he turned, we had to slow down to avoid him.



If you're a regular reader of DRIVER who always stops with the page before "The Backyard Mechanic," this information about tune-ups is for you. This is the minimum information you need to talk to your mechanic and be sure you get what you are paying for. No matter how non-mechanical you think you are, remember one thing: A well-maintained car is a safer car.

Q. What is a tune-up?

A. Technically, it is the service of restoring the engine to the car manufacturer's specifications, or as close as possible. This usually involves replacement and/or adjustment, as needed, of parts that affect the engine's performance.

Q. Who does my tune-up?

A. Seek out a well-trained and equipped mechanic. If your car needs a tune-up, the return on investment in a professional job can amount to as much as two gallons of gas per tankful. If you don't have a mechanic or garage you trust, or if you're disappointed with the one you've been using, talk to your friends. "Word of mouth" is the best advertising a good mechanic can get and you can usually depend on it. If you have a little Japanese car though, don't talk to your friends with big domestics. Many mechanics are specialists.

Q. How often should I get a tune-up?

A. For best performance and economy, make tune-ups an annual habit or at least as often as specified in the owner's manual.

Newer cars equipped with electronic ignition have longer service intervals which vary from make to make. While these engines have no distributor points or condenser, there are still spark plugs, wires, filters, distributor cap and rotor which may need periodic replacement.

If you're driving an older model car which has a conventional ignition system with points and a condenser, have the engine checked at intervals of 6,000 miles and a tune-up every 10,000 to 15,000 miles. After that mileage, these engines become prone to misfiring under heavy load or acceleration.

Q. What parts would my mechanic normally check or replace?

A. It depends on your car, how long it has been since your last tune-up and, of course, the condition of the engine. Here's what you can expect in a complete tune-up:

1. Spark plugs. They should be replaced in sets. If one is misfiring or in borderline condition, they're all likely to be in similar shape.

2. Distributor points, condenser, rotor and possibly distributor cap. If your car has electronic ignition, points and condenser won't be a part of your tune-up.

3. The PCV (positive crankcase ventilation) valve. It's part of the emission-control system. If it becomes clogged, you'll have a rough-running engine at low speeds and idle.

4. The PCV filter. This is a little filter, usually found inside the air filter housing, that keeps dirt from entering the crankcase.

5. The air filter. Your engine breathes air. But when this filter becomes clogged with dirt, the restriction can choke off the air to a point where gas mileage and performance are seriously affected. This condition also adds to exhaust emissions.

6. The fuel filter. It's an often-overlooked part of the fuel system that can bring your engine to a halt when it gets filled with contaminants from the gas tank.

7. The ignition system wires. These are the wires running from the coil to the distributor and to the spark plugs. This is especially important on newer cars, where high under-the-hood temperatures due to emission controls cause more rapid deterioration of the wires.

8. E.G.R. system. If your car is equipped with an E.G.R. (exhaust gas recirculation) system, which is part of the emission-control system, it should be checked and serviced as needed.

9. Vacuum hoses. Leaking or disconnected vacuum hoses can cause rough idle, sluggish performance and increased emission levels.

10. Carburetor choke. A sticking choke can cause hard starting and contribute to poor fuel economy.

Q. What adjustments are made?

A. In addition to the proper adjustment of the parts that are installed, the ignition timing is set plus settings are needed on the automatic choke and carburetor.

Q. What else is included in a tune-up?

A. A good tune-up should include cleaning and checking the battery and cables, starting and charging systems. Although other under-the-hood checks such as hoses, belts and fluids are not necessarily included as part of a tune-up, it is wise to request these services and to check the mileage you have racked up since your last oil and filter change and transmission service. Maybe you can get everything done the same day.

As automotive technology change advances, the nature of preventive maintenance changes. But it doesn't go away. Ignition points and condenser, once basic parts of the tune-up, are disappearing from the automotive scene while new components come on the scene.

Key factors in a tune-up continue to be spark plugs, distributor cap, rotor and ignition wiring. Necessary adjustments of ignition timing, carburetor and choke still are essential to a tune-up of the engine, as is attention to the PCV valve, fuel and air filter.

Industry reports show our nation's cars to be in the worst shape ever. Average age of an automobile is at an all-time high of 6.6 years. Meanwhile, because money has been tight and the winter of 1981 was unseasonably mild in many areas of the nation, many motorists found it easy to postpone routine maintenance.

Additionally, there is a misconception among some car owners that engines with electronic ignition are virtually maintenance free and that there is no need for a tune-up because of extended service intervals.

For thousands of negligent car owners this probably meant inconvenience, lost time and added expense when their cars failed to start during the bitter weather of the last few months.

seat belt SURVEY

When SSgt Brian R. Allen, Gentile Defense Electronics Supply Center, Ohio, was assigned as Driver Training Instructor, he decided to survey seat belt usage among the professional drivers. He asked each participant: "Do you wear your seat belt all the time?" He got a lot of excuses from those who answered "no" and decided to share them with us. What baffles Sgt Allen is how intelligent people can ignore the overwhelming evidence for seat belts and come up with these weak excuses for not wearing them all the time. Do you use any of these excuses? Do you really believe them? (Comments are Sgt Allen's.)

EXCUSE: Stupidity.

COMMENT: It can't be said any better!

EXCUSE: Not all the time, but 90% of the time.

COMMENT: What about the other 10%? There is no immunity to hazards, any time.

EXCUSE: Government vehicles yes, but only sometimes in private vehicles.

COMMENT: Accidents happen, no matter who owns the vehicle.

EXCUSE: Don't like the shoulder straps.

COMMENT: They're there for a reason, to keep your head from hitting the steering wheel. You can't control your vehicle if you can't control yourself.

EXCUSE: Because if something happens to the tractor, I want to be able to leave it.

COMMENT: Without your seat belt you can definitly leave the tractor, maybe through the windshield! And a lot quicker too! According to the Ohio Department of Safety, "People who are ejected from their vehicle are about *25 TIMES* more likely to be killed than those occupants held in their seats."

EXCUSE: Only on long trips.

COMMENT: Again from the Ohio Department of Highway Safety, "80% of all accidents and more than half of fatal accidents happen at speeds of 40 mph or less. If you're going to be involved in a serious crash this year, the odds are high it'll happen on a city street or country road within 25 miles of home — not out on some lonely stretch of Interstate."

EXCUSE: Neglect.

COMMENT: Why? Safety is learning without experiencing.

EXCUSE: Because I totaled a car and could have lost my left leg had I worn my seat belt.

COMMENT: Being thrown *safely* from a vehicle is a "statistical freak." Think you can do it again? P.S., you were one tenth of one percent!

EXCUSE: Sometimes I'm just not thinking about it.

COMMENT: *Sometimes* people are killed or seriously injured.

EXCUSE: Don't like seat belts.

COMMENT: OK, but do you like living?

EXCUSE: Because the shoulder harness is hooked up to the seat belt.

COMMENT: Good! Some older vehicles don't have shoulder harnesses; you're fortunate. Again, it's there for a reason.

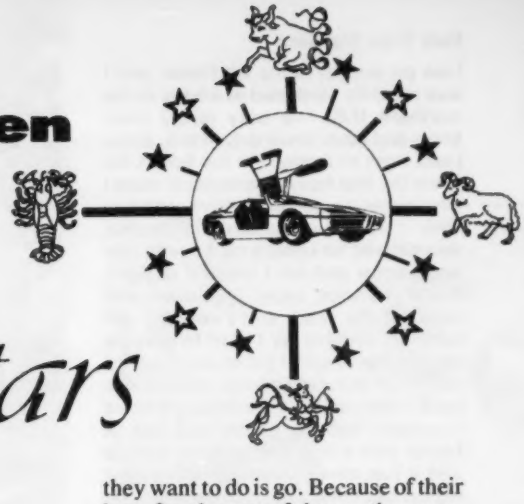
EXCUSE: I feel they're uncomfortable.

COMMENT: That bad huh? Serious injuries are also uncomfortable. And being killed isn't comfortable to those who care about you. As far as the hassle-to-benefit ratio is concerned, there is no contest. A seat belt should take about five seconds to fasten. If you don't have an accident, you have "wasted" five seconds. If you do have an accident and don't have your seat belt fastened, you may have wasted the rest of your life.

And there were those who had no reason. But if you really think about it, did anybody have a *reason?* I don't think so. "Reason" is defined as: The ability to think, understand, and make decisions clearly and sensibly; mental balance; sanity; sound judgment; good sense. Do you really have a REASON? I'd like to hear it.

Now you've either had your laugh or you've learned something. Nobody is going to make you be SAFE. Safety is a responsibility, to yourself and others.

it's written in the Stars



Astrology assumes that heavenly bodies have influence on human affairs. Interpreting these influences as they affect drivers may help some of us avoid accidents that are astrologically chartable.

Here are some of the traits, characteristics and responses of each Zodiac sign.

ARIES (March 21 — April 19) These impulsive drivers love to take risks such as passing on curves, at intersections and over blind hills. They are gullible and therefore believe that when another vehicle signals for a left turn, a left turn is going to take place. Aries get angry easily, so don't cut them off in traffic.

TAURUS (April 20 — May 21) More possessive than any other sign, these drivers never yield right-of-way. In fact they drive like they own the road, almost to the point of running over anybody or anything that gets in their way. This is especially true when they are headed home.

GEMINI (May 22 — June 21) These are the communicating drivers; they're the ones laying on the horn, shaking their fist and yelling obscenities at other drivers. They also want company and therefore follow other drivers far too close. They have no tolerance for slow speeds or foggy weather.

CANCER (June 22 — July 21) These drivers are very protective. They are the ones who park their cars in the far corner of the lot, taking up four places. They are also known for their love of the short trip. They have been seen coming out of their apartment, getting into their car, and making a U-turn to get to the store across the street for a pack of smokes. For some reason, their cars always leak oil.

LEO (July 22 — Aug. 19) As powerful as any driver can be, these people always own the most magnificent vehicles, and flaunt their machines and power everywhere. They never get lost when driving.

VIRGO (Aug. 20 — Sept. 22) These are the drivers on the other end of the scale. They drive the thrifty grocery carts that can be seen filling up wherever gasoline (or diesel fuel) is the cheapest. Watch out that you don't run over them as they struggle to get moving at the traffic light.

LIBRA (Sept. 23 — Oct. 21) These are the really together drivers who always give driving their full attention. However, they are very vain and detest other drivers.

SCORPIO (Oct. 22 — Nov. 20) This is the independent driver who makes every attempt to get away from the crowd by speeding away from the lights, weaving in and out of traffic, or doing anything that will get him or her to the head of the pack.

SAGITTARIUS (Nov. 21 — Dec. 19) These are the free drivers. All they want to do is go. Because of their love for the out-of-doors, they usually own convertibles, but prefer motorcycles that will take them anywhere. The trouble is they are so often enjoying nature they forget to watch where they are going.

CAPRICORN (Dec. 20 — Jan. 19) If ever there was a mountain driver, this is the one. Constantly climbing . . . climbing up the back bumper of slower drivers . . . climbing up the mph scale on the speedometer . . . climbing up the side of hills after running off the road . . . climbing. . . .

AQUARIUS (Jan. 20 — Feb. 20) Another of the independent drivers, this one can't stand convention. The rules were made for the "other guy." Stop signs are for other drivers. And speed limits were made to be broken.

PISCES (Feb. 21 — March 20) This is the kind, humane driver who brakes to a sudden stop on the expressway for an earthworm, or drives into a guardrail to avoid hitting a snail. They are often found driving on the wrong side of the centerline because there is too much traffic in the right portion of the lane.

How seriously can these warnings be taken? Serious enough to realize that there is a little of each sign in every driver.

ADVICE to the snowbound

Dear Fran Slanders

I am an airman in the Air Force, and I was recently stationed at a base in the northern U.S. I've only rarely seen snow and have never driven in it, since I was born and raised in the South. So when the first heavy snowstorm came I was eager to go for a drive and see what it was like. The base, of course, was plowed so I drove off base to find some snow and ice. I found it all right. Some distance away, I skidded and went off the road, and I couldn't get back on. The harder I tried to gun the engine, the deeper I got stuck. Finally, I had to get out and walk about two miles back to the base. By the time I got there I couldn't feel my hands and feet. A friend with a four-wheel-drive vehicle and a tow chain came out and pulled my car back into the road. What did I do wrong?

Frosty, the Snow(bound) Man

Dear Frosty

Lots of things. First, you shouldn't have gone out by yourself when you didn't know how to handle your car on icy surfaces. You should have had someone give you some instruction about driving in winter. Second, you were probably speeding when you went off the road. You may have been driving at the posted speed limit, but that is too fast on snow and ice. Also, I'll bet you didn't have any snow tires.

You didn't give any details on how you tried to get out of the snow and back onto the road, beyond your mention of "gunning the engine," but that's enough to let me know you need some advice.

You were right — gunning the engine only dug you in deeper. Therefore, follow these rules in the future:

Give only light pressure on the gas pedal to move the car, keeping the wheels straight. If this doesn't work, rock the car. That doesn't mean to get out and treat the car like a cradle. It means to try to move forward (again with light pressure on the accelerator and keeping the wheels straight) and then shifting to reverse. Move as far forward as you can and then shift quickly to reverse and move as far back as you can. Go back and forth from first gear (or "drive") to reverse and see if that will get the car moving. If you're in too deep for that, use a shovel to dig around the wheels and provide them with a gentle incline to drive on.

From your trunk, take a little sand or rock salt and sprinkle it behind and in front of the tires for traction. If you don't have any of that, pine needles or even the floor mats from your car will do the job.

If you have someone with you, he or she can help by pushing the car out of the rut or snowbank. When someone is pushing, be especially careful not to spray that person with ice, slush and sand, or to injure him or her by moving the car too quickly.

Even if you had done all these things and failed, you still were probably ill-equipped to handle the problem of getting help. You were close enough to walk back to the base, if the weather was clear, but you weren't dressed for the hike. Always dress warmly when you drive in winter, anticipating that something might go wrong. And keep a blanket and some survival supplies in the car for emergencies when you have to wait for help.

Notice that throughout my answer I have referred to items you did not have in the car. You must prepare for winter. Don't treat it lightly. This year, as in past years, many people have died in winter snowstorms. Have the sand, shovel, blankets and other supplies in your car at all times during the cold months.

Dear Fran Slanders

I've found a good way to avoid spending money on snow tires. If you let some air out of your tires, you can have more traction and it's much cheaper than an extra set of tires.

Penny Saver

Dear Penny

You may think that's a good way to save money, but you'll find it's just the opposite. Tires wear out quicker if they are driven underinflated, because they are designed for the pressure printed on the sidewall. And you lose money in another way — underinflation increases the rolling

resistance of the tires and therefore increases the car's consumption of gasoline. It is far cheaper to buy a set of snow tires, which will last for several years with proper care, than to ruin your regular street tires by running them low on air.

Another thing about snow tires: If you have radial tires on your car, get radial snow tires. Radials and biasplies handle differently enough to make it unwise to mix them on the same car.

Some tire companies manufacture "all-weather" tires, which are made for many different driving conditions. They are another option to consider, although I still recommend snow tires if your area gets a lot of snow. But if you are determined to save money by not buying an extra set of tires, get a set of tire chains. They offer excellent traction, and they are not difficult to apply if you follow the directions.

Dear Fran Slanders

What's the proper way to handle a skid on ice? I lost it last week on the way to work and my car took a bite out of a telephone pole.

Glaring Error on the Glare Ice

Dear Glare

First thing is not to "lose it." You can remain in control by keeping your head. Ease your foot off the accelerator, and keep it *off* the brake pedal. Braking could make things worse. Then steer into the skid. Steering into the skid means steering in the direction the rear of the car is moving. If the rear is coming around to the left, turn the front wheels to the left, and right if the rear is skidding to the right. Do this smoothly and don't steer too far or the car may fishtail. If the car does fishtail, continue to steer into each skid until it straightens out. You may use the brakes *while* you do the correction steering, but if so, pump them lightly.

Dear Readers

You may have other questions about winter driving. Check DRIVER Magazine's October 1981 issue for "A Midwinter Day's Nightmare," which gives more information on preparing for winter and getting through the icy times. Also, the January 1982 issue has an article on handling skids in front-wheel-drive cars.

Fran Slanders

EVENING at the POPs
With ENRICO PEPPERONI and the ROCKER ARM BOY'S CHOIR
Old MacDonald had a car
with a CLICK CLICK here
and a CLICK CLICK there
everywhere a CLICK CLICK

EEE-EYE EEE-EYE- OH!
and on this car he had a SEAT BELT
EEE-EYE EEE-EYE- OH!
here a CLICK
there a CLICK
Old MacDonald clicked that belt
and that's how Mac grew old
Chew on that one for awhile, Bubba
KELLEHER

Sit Down, JUNIOR!

Parents do not allow their children to stand on chairs at dinner, or run through stores just because they want to do it. So why do so many parents allow their children to stand on car seats or crawl around inside the car? It's not only inappropriate, it's dangerous. Car accidents are the *number one* cause of death for children in this country.

Here are some tips for motoring with children:

1. Children under age 5, or weighing less than 40 pounds, should ride in a child restraint.

2. The safest place in the car for a child is in the back seat.

3. If no child restraint is available, children should use the car safety belt. This is much safer than riding unrestrained.

4. Adults should not hold children on their laps while riding in either the front or back seat. They may cause more injuries by crushing their children against the dash with their own bodies, or the children may be torn from their arms and thrown against the hard interior of the car. If in the back seat, the children may be torn from their arms and thrown into the front area of the car, possibly against the hard interior or into another passenger.

5. Children should not ride in the luggage compartment of a station wagon or hatchback.

6. Hatchbacks should always be kept closed when children are riding in the back seat. If they are left open, the children could be ejected from the car in an accident. Open hatchbacks or tailgate windows also increase the levels of carbon monoxide inside the car from exhaust fumes.

(left)
Older children can sit with just the seatbelt.

Give a child a window and he'll push his nose against it. In an accident, an unrestrained child will go straight *through* the window.

Smaller children should be placed in approved child carseats.

tteecc!h!h

double tech with tsgt ron lathrop

COMMENT: Here's a "why not" for using a vacuum gauge to time a diesel engine (November 1981 DRIVER). Most diesel engines are not throttled. That is, they have no throttle plate to restrict incoming engine air. No throttle — no vacuum! In fact many diesel automakers use an engine-driven vacuum pump to operate the power braking and heater control systems.

REPLY: Grumble.

COMMENT: I generally agree with your answers, but must comment on your answer to use a vacuum gauge to time a diesel! Diesel manufacturers could save the cost of installing a vacuum pump if your answer were true. I believe you will find the volume/flow of air through a diesel engine is controlled by rpm, which is controlled by the amount of fuel injected into the cylinders, and not by the throttle valves as on a gas engine/carburetor combination, i.e., no vacuum! I recommend on diesels you time the injection pump as per the manufacturer, and on regular fuel injection engines you stick with the timing light.

REPLY: Murmur.

COMMENT: Diesel engines operate unthrottled, therefore a vacuum gauge reads zero inches of vacuum at idle.

REPLY: Alackaday!

COMMENT: Your reply to the question about timing a diesel engine with a vacuum gauge might be misleading to some readers. "Why not?" implies "yes" to most. First, a gasoline engine may not be consistently, accurately timed using only a vacuum gauge. Second, no diesel engine can ever be timed, at all, using a vacuum gauge. Third, no backyard mechanic should ever attempt to time a diesel engine. The consequences of error are extreme.

REPLY: O tempora, O mores! I'm guilty! May I correct the November reply thus:

Because diesels are unthrottled there's always a lot of air flowing into them. So much air is sucked in that you must be careful that rags and other loose materials aren't also ingested. There is no ignition to be timed on a diesel; however, the injection timing is adjustable at the pump. On the common GM diesel this is done by aligning the timing mark on the pump flange with a mark on an adjacent adapter. Other diesels are different (for example, VW requires a dial indicator and special tools). Until this model year, GM's timing marks were hit-or-miss with tolerances of plus or minus two degrees. Now that GM has developed a microwave measuring technique for locating top dead center, the marks are accurate to 0.8 degrees.

So, although you can't use a vacuum gauge to time the engine, a backyard mechanic can do the job — with the proper manuals and tools.

COMMENT: I would like to add my comments to yours on the use of

graphite oil (November 1981). Graphite oil works fine in newer cars. However, be careful using it in older cars or cars with high mileage. Worn oil seals around the valve stems will allow oil to be sucked into the combustion chamber where the graphite can short out the spark plugs.

REPLY: Basically I believe in sticking with one type oil throughout an engine's lifetime. A change of diet often results in problems such as you point out.

COMMENT: Here are a couple more reasons for using the parking brake (November 1981 DRIVER). First: If you leave a manual transmission in gear and another car bumps yours it can shear off gear teeth. The sudden impact is more than the trans can take even with low-speed impacts. I had a mechanic tell me once that this is a major cause of sudden transmission problems. Many owner's manuals recommend using the parking brake with the trans in neutral except when parking on a steep grade. Then use of both parking brake and transmission is required. Second: On many new cars (such as the one I own) the rear brakes are automatically adjusted by using the parking brake. This is similar to backing up the car on other modeis. If you don't use the parking brake on some cars the rear brakes go out of adjustment.

REPLY: Both your reasons are new to me.

COMMENT: There are other reasons for the location and design of the parking brake (November 1981 DRIVER) which I learned while in England. Although GIs were not required to get English driving licenses, I studied their requirements. One that seemed strange was the use of the parking brake each and every time an automobile is brought to a halt. As I tried using this "technique" I found that with a standard shift car it is very useful in many instances. For example, it greatly eases starting on hills. The "normal, American" way is to ease out on the clutch until it provides enough force to allow releasing the brake so that the brake foot can operate the accelerator. This takes skill and luck to start smoothly without stalling. Use of the parking brake holds the car so that the feet are free to operate the clutch and accelerator at the proper time. The hand brake allows release of the braking restraint in concert with the engagement of the clutch and the application of engine power. The result is a smooth start without undue slipping (wear) of the clutch and an increased ability to compensate for problems

with the engine (cold, balky, etc). That brake, in a center location, is "handy." Try it — you may like it!

REPLY: Sounds good to me except for some minor problems. Some of the younger drivers think a standard transmission is an automatic. Those people who don't have the coordination to operate two feet in sync probably can't manage two feet and their right hand at the same time either. Also, if the handle isn't completely released, there is additional drag on the car as well as increased brake wear. While the center location is best, I found that one on the door side of driver's seat is just as good — especially for catching pant legs on.

COMMENT: I recently bought a new car, and as luck would have it, I got an assignment to an isolated tour. I don't want to sell the car but need some ideas on storing it in my garage. If you think this system is not good, my wife received her license but is going to use the car only for work and downtown which is around 20 miles per week. I was going to ask a friend to come by the house once a month and "blow it out." Do you think this might work? If so, how many miles would it need for a good run?

REPLY: It's always better to drive a car regularly than to leave it idle. But because DRIVER's storage articles are among the most requested, you'll find one in this issue.

Preparing for the "blow out" drive is even more important than the drive itself. In fact, if the car could be driven daily the way I'm about to explain, it would probably last a lifetime. However, before tackling this driving method you should get a full set of instruments for your machine, including tach, oil pressure and water temperature gauges as a minimum.

After starting the car, wait for the oil to begin fully circulating. Then hold the engine at a steady 2,000 rpm until the temperature gauge starts to move. Do NOT blip the engine (run the revs up and down) since this does more damage than any other form of abuse. Once the temperature gauge has moved off the peg, drive away, shifting at 2,500 rpm until the temperature has risen to operating level.

Now you can flog it all you want because the engine, transmission and the rest of the operating gear should all be evenly heated. The best exercise is 20 miles of continuous highway driving. This burns off many of the corrosive deposits that built up during all those short trips.

more on code 24

Don't forget that maintenance is based on time or mileage. Therefore, the oil will have to be changed twice while you're gone. Check the "Log It" and "Lifetime Maintenance Program" stories in this issue. For more information, see "How to Make Your Car Last Forever" in the June 1980 DRIVER.

COMMENT: Could you please tell me what the laws are concerning bringing a non-California car into California? I have made numerous inquiries about the emission laws but each time I ask I get a different answer. Will I have to equip the car to conform to California standards? I believe my (year, make, model) was built in Canada also. The (displacement, code letter) engine does not have an air pump.

REPLY: Pay close attention, there will be pop quizzes tossed in here and there. As a service member you may register your car in your home-of-record state or your duty state. When transferring to California you have three choices, of which one choice has two options. The choices are to register your car in your home state, keep the registration in your pre-California duty state until it expires, or register in California. If you keep current-duty-state plates, when they expire you may register in either your home state or in California. If you elect to register in California, you may apply for a non-resident service member registration.

Pop Quiz: I'm from Michigan, stationed in Texas where my car is registered. I am transferred to California. I can register my car in:

a. Michigan

b. Texas

c. California

d. Texas until the current registration expires. Then I must register in either a or c.

e. California as a non-resident service member.

The answer is all except b.

If you are registering the car in that part of California known as the South Coast Air Basin which includes all of Orange and Ventura Counties and the urban areas of Los Angeles and San Bernardino Counties it will have to be inspected.

A 1971 or newer model car is factory-equipped with all the needed emission control systems and you do not need to add any devices. This includes cars that were not built for California sale, because these cars will be inspected according to federal emission control laws with no modifications needed to make them legal in California. On 1966-70 model cars, a device to control nitrogen oxide (NOx) emissions must be added to those anti-smog controls installed at the factory. Exempted 1966-70 vehicles include those with a gross vehicle weight (GVW) or more than 6001 pounds or those what have engines originally equipped with fuel injection, more than one carburetor, turbochargers, ram air induction or special intake manifolds. Those 1955-65 model cars that were equipped with add-on anti-smog devices cannot have such equipment removed. Totally exempt from the program are diesels, electric-powered cars, motorcycles, two-cycle engine cars, cars with engines of less than 50 cubic inches displacement and cars not registered for street use.

As for the actual inspection, your car could be rejected before being tested if it is unsafe. Unsafe conditions include: leaking gasoline, oil or water; a bulging radiator hose; loose fans; an engine making loud internal

continued

noises; faulty transmission; or tires that are under-inflated, worn or bald. Needless to say, these conditions must be corrected.

The drive-through testing takes about six minutes, beginning with the first station where the inspector enters data from your car's identification documents into the computer so that appropriate testing standards can be selected. Did you blow your car's original engine and install a different one? You'd better note the information on a Statement of Facts form, because it is the engine that is tested, not the car. In other words, a 1980 California car with a 1972 federal engine will be tested against 1980 California standards unless you bring the change to the inspector's attention, in which case it would be tested against 1972 federal standards.

Since the test equipment has grown very sophisticated, under-the-hood visual inspections have been greatly reduced this year.

At the second position, the most important part of the inspection takes place. Your car is driven onto a dynamometer, a machine that allows it to be tested at a 40-mph driving speed while it rests in one place. A probe is inserted into the tailpipe to measure smog-forming pollutants.

Your vehicle might also be rejected for testing at this point if it cannot maintain a steady 40 mph, produce a steady horsepower rating at 40 mph or if it doesn't produce enough exhaust gases to be sniffed (leaking muffler or exhaust system?).

A computerized gas analyzer compares emissions of your car with levels allowed by the appropriate standard and prints the results on a Vehicle Inspection Report at the third station. If your car passes, you receive a Certificate of Compliance along with the report. If you fail, you get the Vehicle Inspection Report and instructions on how and where to obtain repairs.

Repairs and reinspection are required on every car which fails the first test. The cause(s) of failure and the recommended repairs are explained on the Vehicle Inspection Report. By pinpointing what defects exist and what repairs are needed, the report assures passing the re-test if repairs are properly done and it aids you in preventing unnecessary repairs from being made.

You or anyone else not paid for work can repair your vehicle if it fails the inspection. However, if the repairs are made by a licensed qualified mechanic employed in a Blue Shield Motor Vehicle Pollution Control (MVPC) station you are guaranteed to need only one re-test and are protected by certain legal cost limits. A list of nearby Blue Shield MVPC stations will be provided to you. A detailed report on the performance of each repair facility is also available for your review. It shows the number of repairs performed, the percentage of repaired cars passing the re-test, and the average cost of repairs.

You are legally protected by a limit on the cost of repairs. If your car fails the test because of excessive tailpipe emissions, repairs or adjustments can cost no more than $50 if they are performed by a qualified licensed mechanic in a Blue Shield MVPC station. Because about 60 percent of all first-time failures are the result of the carburetor being too lean or too rich, many repairs or adjustments cost much less than this limit.

However, if your car fails because emission control devices are missing or not operating properly, you are protected by a different set of limits, again provided they are done by a qualified licensed mechanic in a Blue Shield MVPC station.

Basically, the limits are $85 for 1955-65 vehicles, $150 for 1966-74 vehicles, $250 for 1971 and newer vehicles that were not fitted with catalytic converters from the factory, and $500 for 1975 and newer cars that did come from the factory with catalytic converters.

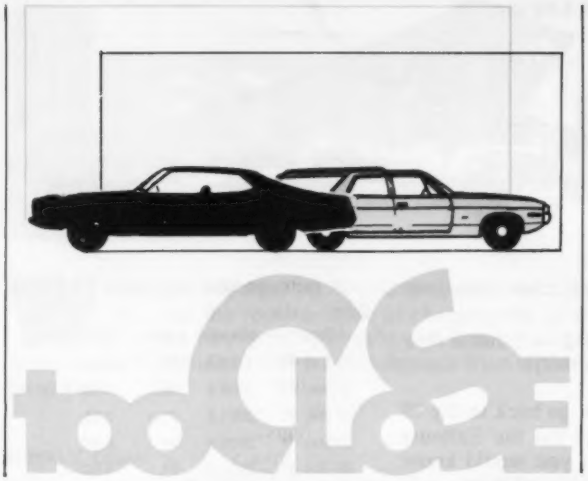
Of course, if you fail for both the tailpipe emissions and smog control device reasons, the $50 limit is added to the device limit.

If repairs are estimated to cost more than these limits, the qualified licensed mechanic will recommend your vehicle for a waiver after repairs costing up to the limits have been performed. The system has several protections built in as well as checks and counter checks for both the inspection center and the Blue Shield MVPC station.

After the repairs have been made, you return to the inspection center for a retest. If the vehicle passes, you will be issued a certificate to use when registering the car. If it fails, but the repairs have been performed by a qualified licensed mechanic at a Blue Shield MVPC station, you will receive a waiver certificate for registration. If the car fails and the repairs were not done by a qualified licensed mechanic in a Blue Shield MVPC station, you must have further repairs and further retests until it does pass.

Generally, a recent vintage vehicle that has been kept in reasonable tune should pass the test with flying colors the first time. Having your car worked on before having it tested could be costly because you are not protected by the repair limits and other guidelines built into the system. The first test costs $11, while each re-test is $7.

OK? You should be able to answer your own questions now. Will you have to equip your car to conform to Cailfornia standards? No, other than 1966-70 retrofitting of NOx control devices, but in the southern California smog basin you will have to pass an inspection. You're right about your engine not having an A.I.R. — Air Injection Reactor (Thermactor Air Pump). Your engine had very few emission control systems and devices compared to the same size engine with a different code that was built in both federal and California form. Yours had (I'll just use the initials to simplify the reference) PCV, TAC, EEC, CAT, EGR and PVS, while the other same-size federal engine had all those plus A.I.R., EGR/BPS, TVS(TAC), ABV, VCV(EGR) and DV. But the California engine of the same size had it all except PVS. The inspection center computer would know all that plus a lot more in micro seconds.



FOR COMFORT

SOMETHING WAS MISSING

This incident occurred a few years ago but I remember it well! I was driving with two members of my family and two close friends as passengers, going north out of Nashville, Tenn. We were on a two-lane highway near the Tennessee-Kentucky state line. It was about 2:00 P.M. on a bright, sunny day, mid-week at the end of May. The highway had just been blacktopped, so the surface was coal black, very smooth, with heat waves rising from it. There were as yet no lane dividers or other markings painted on the road — nothing at all. The countryside was gently rolling.

We were moving along behind a semi-tractor rig. As we started up an incline, the big rig slowed down to about 20 mph. I pulled to the left far enough to see the road ahead was clear. But as I pulled out to the left and moved up near the front of the semi, there suddenly appeared another car coming directly toward me at what seemed a high rate of speed. We were now on the crest of the hill and I could see that what I had thought was a very small hill had a long, gradual descent and that the on-coming car had been hidden below the crest when I first pulled out to pass.

By now the semi was on the descending side of the crest and had picked up speed to 30 mph or better. I was traveling about 40 mph and had no room to accelerate and pass nor to fall back behind the semi. I hit my horn and turned on my signal for a left turn. In a matter of seconds my car was off the road on the left shoulder and the on-coming driver was applying his brakes so hard that he was in a straight-ahead slide. We passed only a few feet apart.

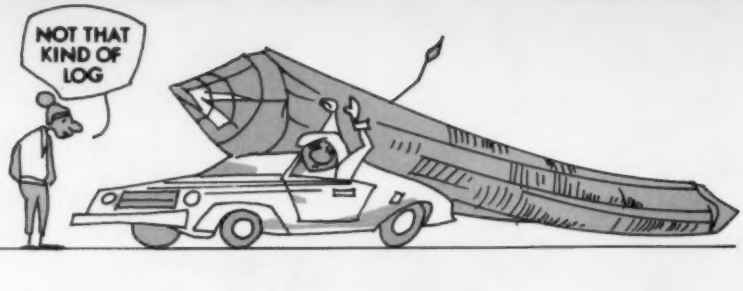
That fresh, coal black road surface had deceived me into believing that I could see all of the road ahead when actually I could not see the part at the bottom of the hill. Had there been traffic control lines painted on the blacktop, I would never have attempted to pass.

This frightening near-miss is an example of how much we rely on roadway markings. As our correspondent says, if he had known the hill he was going up had a long, gradual descent where on-coming vehicles could be hidden, he would never have tried to pass the semi. And had the dividing lines been painted on the new blacktop he ***would*** *have known because there would have been a no-passing line for his lane.*

When the traffic safety experts tell us deteriorating roadways are now among the four or five top causes of accidents, they aren't just talking about potholes and narrow old bridges. On many surface streets and rural highways, painted lines, arrows, and other markings we depend on are almost worn off – one more thing for the defensive driver to watch out for.

LELAND K. LUKENS
Brigadier General, USAF
Director of Aerospace Safety

LOG IT



When's your car due for an oil change? How long ago did you last inspect the brakes? When should you change the air filter? Has your gas mileage been falling off or is it still holding its own?

You could answer all these questions quickly if you maintained a log and kept it in your machine's glove box. All you need is a notebook and a pencil to be on your way to a better maintained car.

At minimum the log should be divided into two sections; a maintenance/repair section and a gasoline mileage section. Some people prefer more variety. For example there might be individual sections for mileage, maintenance, repairs, accessories, tires and notes.

Basically the log contains the date, mileage, service performed, cost and name of the repair facility. Progressing from the front to the back provides a complete history of the vehicle's servicing as well as help in planning maintenance.

A sample log might read:

22 Aug 81 — 80691 — Replace radiator cap ($9.98) and radiator fan switch ($16.25)

25 Aug 81 — 80917 — New ignition switch ($23.59) Del's Foreign Car Service, Cibolo, TX ($81.25)

12 Sep 81 — 81802 — Outside Front Pads ($27.95) Inside Front Pads ($13.70) Front Wheel nuts ($7.60) Front Rotors ($101.92) Rear Pads ($11.68) Rear Rotors ($81.25) Check pad wear at 85800

13 Sep 81 — 81860 — Air Filter ($14.77) Points ($4.10) Distributor Cap ($5.29) Plugs ($5.05) Rotor ($3.15) Castrol GTX 20W-50 ($5.05) Filter ($5.98) Change oil and filter at 85360

22 Sep 81 — 82250 — Oil Pressure sending unit ($14.89)

29 Sep 81 — 82357 — Muffler ($36.95) Exhaust Pipe ($49.95) Gaskets ($5.00) Welding ($14.00) Bill's Muffler Shop, Cibolo, TX ($10.00 labor) LIFETIME

If the exhaust pipe failed later there might be a note:

4 Dec 81 — 86512 — Exhaust Pipe replaced ($49.95 warranty).

Then you would go back to the 29 Sep entry and line out the Exhaust Pipe entry so that you would know that it had been replaced later.

If the car were to start running rough, you would look at the log and notice that the plugs and points had been replaced at 81,860 miles. If that were only 1,500 miles ago, you wouldn't buy new plugs and points, but might look at the fuel filter instead. This makes the log a troubleshooting guide as well as an anti-ripoff aid. If someone else was working on your car, he might be a little less likely to charge you for plugs and points if you told him they had been in only 1,500 miles when you were explaining your problem.

A quick reference of the last part of every entry will reveal a future note. Take a grease pencil and put the lowest mileage numbers on the plastic face of your speedometer. When the odometer matches the grease pencil figures, check the log to see what needs checking, maintenance or repair.

Every drop of gasoline that is put into your tank should be accounted for in the log. Start at the back and go forward. List the date, speedometer reading, gallons and cost.

You don't need to compute your miles per gallon every time you fill up, but you should do it regularly. By starting at the back of the book on the bottom of a page and working your way up the page and forward, you can make it easy to determine the number of miles driven. Simply subtract the bottom figure from the most recent fill-up to get the number of miles driven. Then add all the associated fill-ups to get the number of gallons used. Divide the miles driven by the gallons and you get miles per gallon.

A mileage section might look like this:

Date	Mileage	Liters	Cost	MPG
30 May 81	3153.2	23.5	$ 9.20	
27 May 81	2988.9	12.1	4.79	
27 May 81	2835.6	21.5	7.95	
24 May 81	2629.3	24.1	8.90	
23 May 81	2403.6	21.1	8.00	
20 May 81	2223.7	31.3	11.90	27.83

First you'll notice that this log is in liters because the local pumps read this way, so it is easier to record. There are 3.785 liters per gallon. The last time the mpg was figured was 20 May. So with the 30 May fill-up the car had been driven 929.5 miles (3153.2 minus 2223.7) since the last accounting and used 102.3 liters or 27 gallons (102.3 divided by 3.785). That means the car delivered an average 34.39 miles per gallon during the period. Since the car has been regularly delivering about 34 mpg, it is still in good tune.

The reason for not figuring mpg on every tank is because there are so many variables. For example, the individual mpgs for the 23-30 May fill-ups are: 32.27, 35.45, 36.32, 47.96, and 26.47.

It is a good idea to keep the receipts for maintenance and repairs in the glove box with the log book while the items are still under warranty. After that, the receipts should be kept with other car records. That way they can be shown to prospective buyers at resale time as proof that the vehicle has been well cared for.

A well-maintained log combined with a good maintenance plan can save you time, money and a good deal of grief. The idea with a good maintenance plan is to replace parts before they fail. This not only brings you peace of mind, but such replacements are usually cheaper than service on items that have failed while in use.

To help you develop your own maintenance plan, check the "Lifetime Maintenance Program" story elsewhere in this issue.

Excerpts from "How to Make Your Car Last Forever," June 1980 DRIVER Magazine

LIFETIME MAINTENANCE PROGRAM

When you buy a car you should prepare a maintenance plan for the entire time you intend to keep the vehicle. Not just the routines such as changing the oil every six months, but a full-scale plan.

The 10-year/100,000-mile plan here reflects the average life of conventional front-engine/rear-wheel-drive American-built vehicles. Use it as a reference from which you can develop your own lifetime preventive maintenance program.

WEEKLY, Check:

■ Engine oil level ■ Tire air pressures ■ All exterior lights ■ Brake operation ■ Emergency brake operation ■ Horn

MONTHLY, Check:

■ Battery fluid level ■ Windshield washer fluid level ■ Coolant level ■ Air conditioner belt ■ Tire wear ■ Brake fluid level ■ Power steering fluid level ■ Power steering belt ■ Spare tire pressure

If you haven't been using the air conditioning, run it at full for at least five minutes.

SEMI-ANNUAL or EVERY 7,500 MILES, Check:

■ All drive belts ■ Starter connections ■ Alternator connections ■ Radiator hoses ■ Clutch play ■ Radiator cap pressure ■ Manifold heat valve ■ Air conditioning system for leaks ■ Air conditioning refrigerant level ■ Windshield wiper blades ■ Windshield washer system

Replace: ■ Engine oil ■ Oil filter
Lubricate: ■ Front suspension
Adjust: ■ Timing **Rotate:** ■ Tires

Put a coat of conditioner or wax on the exterior of the vehicle as well as respray everything with silicone.

ANNUALLY OR EVERY 15,000 MILES, Check:

■ Entire brake system ■ Tire tread depth ■ Shock absorbers ■ Engine mounts ■ Steering linkage ■ PCV valve ■ Sparkplug wires ■ Rear axle fluid level

Replace: ■ Sparkplugs, points and condenser (not on CDI systems) ■ In-line fuel filter ■ Windshield wiper blades ■ Coolant, after flushing and back flushing radiator and block separately

Lubricate: ■ Universal joints ■ Shifting linkage ■ Wiper linkage ■ Hood release ■ All body hinges

Adjust: ■ Dwell ■ Clutch pedal free travel

Clean: ■ Air filter

EVERY TWO YEARS OR EVERY 30,000 MILES, Check:

■ Emission-control system

Replace: ■ All drive belts ■ Air filter ■ Sparkplug wires ■ Distributor cap and rotor (not on CDI units) ■ Crankcase breather air filter ■ Transmission lubricant and filter

Adjust: ■ Automatic transmission ■ Front suspension and steering ■ Automatic choke

EVERY THREE YEARS OR EVERY 40,000 MILES, Check:

■ CDI for voltage output
■ Wheel bearings; always repack and replace seals

Replace: ■ Radiator cap ■ All hoses ■ PCV valve ■ Differential gear oil ■ Original equipment shock absorbers

EVERY FOUR YEARS OR EVERY 50,000 MILES, Replace:

■ Battery and Cables ■ Coil
■ Brake linings, wheel cylinders and master cylinder ■ Tires

EVERY FIVE YEARS OR EVERY 60,000 MILES, Replace:

■ All light bulbs ■ All fuses
■ Complete exhaust system including catalytic converter
■ Manual transmission clutch

EVERY SEVEN YEARS OR EVERY 70,000 MILES, Replace:

■ Thermostat ■ Water pump ■ Fuel pump ■ Universal joints

EVERY EIGHT YEARS OR EVERY 80,000 MILES, Replace:

■ Wheel bearings ■ Ball joints ■ Tie-rod ends ■ Steering idler arms

EVERY NINE YEARS OR EVERY 90,000 MILES, Replace:

■ Carburetor complete with choke ■ Starter and solenoid
■ Alternator ■ Voltage regulator ■ Power brake booster
■ Power steering pump

With many replacement items it's far more economical to buy top-quality units rather than their less-expensive equivalents. For example, high-quality shock absorbers last 100,000 miles and cost $40, while $10 units may last less than 20,000 miles. Besides, the $40 units provide a smoother ride and safer handling. A top-quality $100 clutch will last three or more times longer than a $50 unit. Also, we all know that no muffler will last a lifetime, but you'll get free replacements.

It is also better to do "system" replacements rather than unit repairs. When you buy a new battery replace the cables, too. While replacing the brake linings, why not take care of the wheel bearings and wheel cylinders at the same time?

Remember the idea is that it is cheaper to do the maintenance now than wait for the items to fail. As with front-end alignments, the $15 for labor is much less expensive than the cost of two or more $100-apiece tires.

A log kept in the car's glove box is an excellent aid in planning maintenance (see "Log It," on page 22).

in and out of Mothballs

Judging from our mail one of the first things people think about when they get orders for a remote or at-sea tour is storing their car. We can say that because the next thing they do is write to us asking for tips (see this month's Double Tech).

Clearly, leaving the car parked in a garage is not enough. It must be properly prepared if it will not be used for several months.

Ideally the car should be kept in a cool, dark, dry environment where the temperature doesn't go below freezing. Extremely high temperatures are also dangerous. However, if the paint is marginal, or the car is to be left in a fairly temperate area, it can be stored outside.

The most important thing to remember when mothballing the engine is — do it while it's warm. All the procedures are worthless if moisture has a chance to seep into a cold engine.

The fuel system can be prepared by using a siphon pump or other safe draining method to remove as much gas as possible from the tank. Then let the engine run until it is out of gas. If gasoline is left in the car it will evaporate, leaving a deposit that can damage the engine.

Mix up a three- or four-quart batch of kerosene and oil (three parts kerosene to one part oil), dump it in the tank and bounce the back end to thoroughly slosh and coat the inside of the tank.

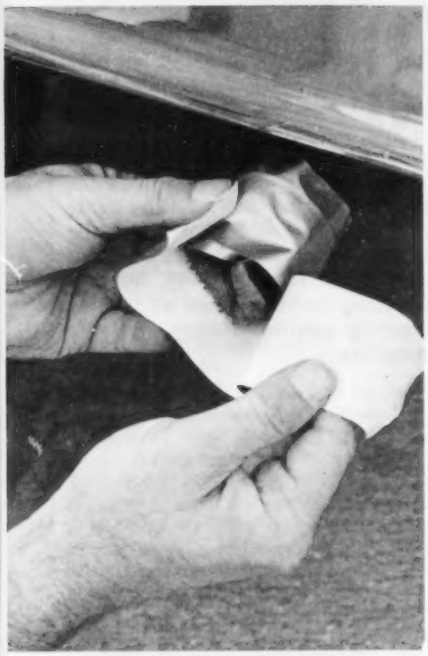
Cool, dark, dry environments are the best for storing any vehicle. This is the day veteran New England car collector Presley Blake put a new 1967 Mercury Cougar XR-7 into storage next to his prized 1925 Rolls Royce.

Remove the spark plugs and ground the large ignition wire coming from the coil to the distributor. Pour one ounce of nondetergent oil through the spark plug hole into each cylinder. Use the same weight oil you would normally use for local driving.

Reinstall the plugs, but not the coil wire. Crank the engine over five to 10 seconds. This will coat the cylinders with oil and draw the kerosene/oil

Sealing the air cleaner will prevent FOD (foreign object damage) and moisture from entering the engine.

Keep moisture out of the engine by inserting some absorbent cloth, such as an old towel, into all engine openings.



Don't forget to pack and seal the exhaust pipe(s).

After stuffing an opening with cloth, seal it completely with duct tape.

mixture into the fuel pump and carburetor to help the rust-proofing process.

Change the oil and oil filter. Contaminants in dirty oil can cause serious problems when left in the engine.

Relieve tension on all drive belts (fan, power steering, air conditioner, A.I.R., etc.) to prevent stretching and belt damage during storage.

The coolant should be drained, the system flushed and fresh, rust-inhibiting coolant added in the strength normally used locally.

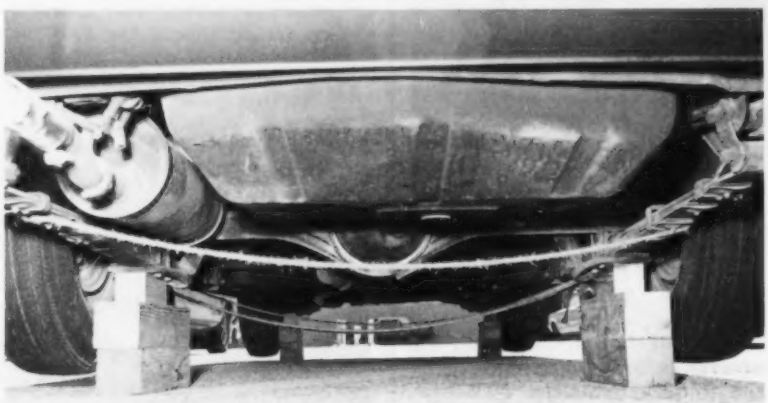
Insure transmission and rear axle fluid levels are correct, too.

Remove the battery. If it's not a "lifetime" type, sell it or throw it away. The "lifetime" batteries will usually take a charge after sitting for a year or more, whereas a conventional battery probably will not.

Get some duct (silver-colored fabric) tape to plug and tape the exhaust pipe(s) and air cleaner. On older vehicles, also plug and tape the breather on the valve cover.

Use a good upholstery cleaner and lots of elbow grease on the interior. This will clean and soften the upholstery and get it ready for an application of silicone spray. Don't forget to treat all the plastic interior parts with the silicone spray including knobs, dials and a double dose for the vinyl dash. Neatsfoot oil works wonders on real leather.

continued



Blocks will keep the tires from flat-spotting — better yet, remove the wheels and tires to a more secure area.

Before storing your treasured toy inside, check local fire laws. Also select a storage area with a good security system.

continued

Plastic is not the best material for covering cars.

A light layer of petroleum jelly will preserve chrome, while bright-metal trim needs no treatment.

Now hit the tires, door seals and vinyl top with that silicone spray.

If at all possible, jack the car up and put it on jackstands. This will eliminate tire flat-spotting and ease the strain on shocks, wheel bearings, etc. If it can't be put on blocks, increase the air pressure in each tire 10 to 15 psi. Try to leave the car in neutral with the parking brake off. It would also be wise to cut a piece of wood long enough to fit from the bottom of the dash to depress the clutch.

Finally, open a window just a crack and cover the vehicle with a top quality car cover. Don't use plastic to cover the car because it can't breathe and moisture will be trapped against the body. Also, if the car is being left in a windy area you may not want to cover it at all. The wind will cause the cover to flap and ruin the paint.

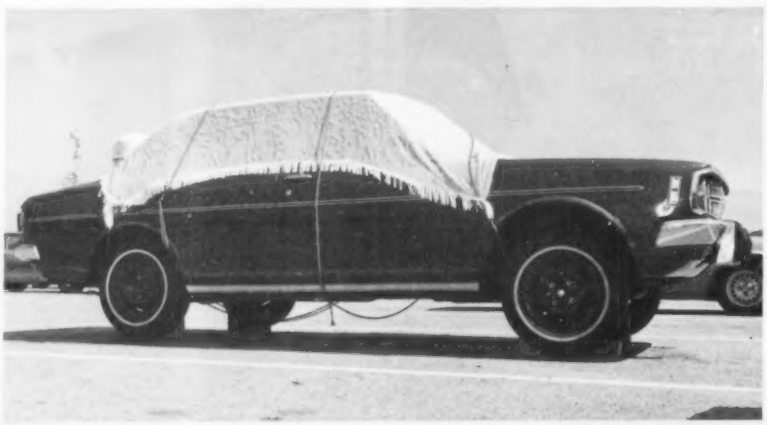
Upon returning, just reverse the preparation process. Add gas (the kerosene/oil mixture will probably have evaporated), install a freshly charged battery and tighten all the belts. Check all fluid levels such as the radiator, power steering pump, brake reservoir, oil and differential. Don't forget to check the tire pressures, also.

Disconnect the fuel line between the fuel pump and carburetor. Provide a catch basin for the fuel and have a friend turn the engine over for 10 to 15 seconds. This will both pump out any residue in the fuel line and provide oil to engine parts.

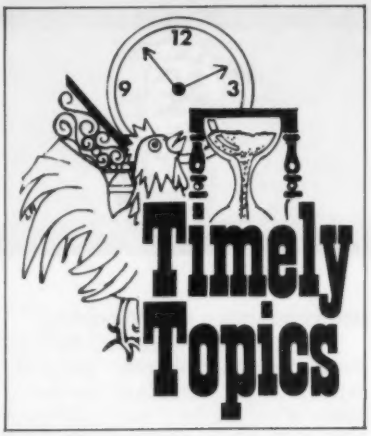
Reconnect the fuel line, reinstall or unground the coil wire, install new spark plugs and start the engine. It may be hard to start and run unevenly at first, but it should smooth out in a few minutes.

Before driving away, check for fluid leaks, make sure all the lights are working and double check the brakes. Now you can buckle up and start to drive off slowly, double-checking braking action as well as steering control. Happy and safe motoring.

This looks more like a stripping dump or junk yard than a long-term storage area.



This system is OK as long as you have permission to use that old bedspread and the parking space is an approved storage area.



SPEEDOMETERS AND ODOMETERS

NHTSA has moved to rescind the standard on speedometers and odometers. The speedometer provisions, which have been in effect since the '80 models, require use of both miles and kilometers and highlight 55 mph. They set 85 mph or 140 km/h as the maximum speed listed on the theory that lives would be saved if young drivers were not tempted to test a car's speed beyond that listed. The use of mph and km/h was because of planned use of metric measures on highway marking, but that plan has been abandoned.

The odometer provisions — which the administration has already delayed for a year — focused on discouraging tampering. The theory was that fewer vehicle buyers would be misled about the age of a vehicle or its condition and that proper preventive maintenance would be done on an accurate odometer reading.

NHTSA now believes that neither requirement is likely to have "measurable or significant safety benefits." A government study shows drivers are aware of the need for maintenance from appearance or performance rather than mileage.

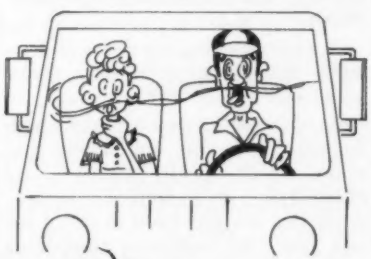
AIR BAG TAX PLAN

Senator John C. Danforth has come up with an innovative approach to motivate auto makers to install air bags in cars. The Missouri Republican, who is chairman of the Senate Commerce, Science and Transportation Committee Subcommittee on Surface Transportation, has introduced legislation which allows manufacturers to claim a refundable tax credit of $300 for each 1984 and later model year car equipped with air bags. Beginning with 1984 cars, the amendment to the Internal Revenue Code also would impose an excise tax of $300 for each car manufactured without an air bag.

Danforth developed the tax scheme after acknowledging that his earlier bill which would have reversed the rescission of the passive restraint standard by the National Highway Traffic Safety Administration was doomed to failure. "Absent the support of the Administration, the legislation had little chance of being signed into law," he admitted.

Danforth believes that the tax plan meets the two major objections to the passive restraint rule. Neither the auto industry nor the consumer who might resist buying a new car for more money would bear the cost of the restraints. The federal government initially would absorb the costs, Danforth said, but ultimately air bags would create a net savings of over a billion dollars a year. According to NHTSA's own information, the government absorbs over $6 billion in accident, injury and fatality costs every year through social security, medicare, medicaid, aid to families with dependent children, disability insurance, and lost corporate and personal income taxes. These amounts are expected to increase, Danforth says, as the fatality count climbs from 53,000 deaths per year to 70,000 per year by 1990.

(Highway & Vehicle Safety Report)



MANUFACTURER TO RECALL RECREATIONAL VEHICLE FURNACES

The Suburban Manufacturing Co. of Dayton, Tenn., has notified the Department of Transportation that it plans a recall of certain furnaces sold for use in recreational vehicles because of a possible carbon monoxide problem.

Suburban Manufacturing told the department's National Highway Traffic Safety Administration that the voluntary recall could cover 200,000 furnaces.

The company has determined that a potential hazard relating to motor vehicle safety may exist in Dynatrail furnace models NT-17, NT-20, NT-22 and NT-30, which were manufactured between June 1970 and January 1977 and would most likely be installed as original equipment in model year 1970 through 1977 recreational vehicles.

The company said it is possible that recreational vehicle manufacturers may have installed some of these units in later model vehicles. The furnaces in the recall group have a numerical serial number between 0064881 and 0715865, inclusive.

NHTSA suggests that owners of vehicles which are equipped with the affected furnaces call Suburban Manufacturing Co. at (615) 775-0516 or NHTSA's Auto Safety Hotline at (800) 424-9393. Washington, D.C. residents call 426-0123.

According to the firm, the potential hazard exists when under certain conditions the unreinforced rubber connector tube located between the intake air blower and the combustion chamber may crack through and fully separate. Tube separation could allow carbon monoxide to enter the living spaces of the vehicle.

The company told DOT it believes the traffic hazard from this problem is minimal, except to the extent that there may be carbon monoxide recirculated in motor homes if the furnace is operated while the vehicle is being driven. At least 150 vehicle manufacturers installed these furnaces in their vehicles.

CHILD PROTECTION

Massachusetts has become the 12th state to pass legislation on child passenger protection joining Kansas, Michigan, New York, North Carolina, Minnesota, Rhode Island, Tennessee, West Virginia, California, Maine, and Virginia. The Massachusetts bill went into effect on Jan. 1, 1982.

The Massachusetts law stipulates that all children less than five years old must be in child safety seats or seat belts when traveling in motor vehicles. The only exceptions are for taxis, vehicles that are not equipped with seat belts, or if the child is physically unable to use a safety seat or belt. The fine of $25 will be waived upon proof of purchase of an approved seat.

Preliminary reports indicate that at least 25 states plan to introduce child passenger protection legislation in the upcoming 1982 legislative year. The issue appears to be gaining strength as states with the laws begin to document the benefits.

BACKFIRE

LETTERS to the EDITOR

USE OF CHAINS

In your December 1981 issue, the article on the Jeep CJ-5 has some comments on on-and-off-road driving in snow. It says, "Never put chains on the front unless you also have them for the rear." While this was written with four-wheel drive in mind, would it not also apply to front-wheel-drive vehicles? They'd need front chains for drive traction, and rear ones to keep the back in line on braking. With the ever-increasing number of front-drive vehicles this may be worthy of note.

MSgt Charles H. Nash, Jr., USAF
Hastings, NE 68901

Sorry, but putting chains on non-driven rear wheels is actually fruitless. The type of slide American Motors Corporation was talking about is controllable with chains because of differential action and engine compression braking. Such is not the case with front-wheel-drive vehicles; the slide will develop under hard braking regardless of the use of chains on the rear wheels. See the January 1981 DRIVER article, "Front Wheel Drive Skid Control," for proper handling of such situations.

MANDATORY SEAT BELT LAWS

The trouble with a law which mandates wear of seat belts is that the difficulty of enforcement would inevitably lead to general disrespect of that law. The existence of such a law might increase seat belt use by a few percentage points, but it wouldn't really accomplish what it was intended to do.

What is really needed is a law which is self-enforcing. The way to do this is, in my opinion, to make the seat-belt requirement part of the auto insurance laws. For example, let the law state that:

Any person who suffers an accidental injury while operating or riding in a motor vehicle without wearing an available seat belt or combination seat-belt/shoulder-harness is prima facie guilty of contributory negligence and is entitled to receive insurance compensation for no more than half the amount which would otherwise be payable under the provisions of any insurance policy in effect at the time of the accident.

Any person who while operating a motor vehicle becomes liable for payment of damages which would otherwise be covered by liability insurance, and who during such operation was not wearing an available seatbelt or combination seat-belt/shoulder-harness, is prima facie guilty of contributory negligence and is entitled to be covered for no more than half the amount of the liability which would otherwise be payable under the provisions of any insurance policy in effect at the time of the accident.

Notwithstanding the above restrictions, any purchaser of auto insurance may obtain full coverage, in spite of the defined contributory negligence, by paying double the premium which would otherwise be charged for a given limit of coverage. After this law has been in effect for one year, the insurance companies may request and obtain a change in this double-premium rate through the normal insurance-rate procedures, based on the accumulated accident experiences of wearers vs. non-wearers of belts.

Lawyers would be able to improve this wording considerably, but I think the point is clear — put the burden of enforcement on the people who are supposed to be wearing the belts. This allows people the legal "freedom" to leave the belts off if they so desire, but makes them pay the price of that choice. It also imposes no burden of enforcement on the police. The administrative overhead would be at the accident investigation point and in insurance record-keeping.

Your editorial stated that the Germans "rule that unbelted motorists injured in accidents are presumed guilty of negligence," but you did not have space to go into detail about how they manage that policy. While my proposal does not go quite so far, it does have the advantage of retaining some degree of protection and making it very clear to the motorist exactly what the cost of full protection is.

Maj Carl S. Zimmerman, USAF
Scott AFB, IL 62225

WHAT ABOUT THE POLICEMAN?

I think one of the last things this country needs right now is more government intervention. I believe in laws that keep people from hurting or infringing on the rights of others, but the wearing of seat belts does not fall into this slot. If I don't wear them, I'm only endangering myself and no one else. If I want to kill myself, I guess that's my business, not Uncle Sam's. I guess I'm responsible enough to keep alive without government intervention.

I have a question for you. Why is it so extremely rare to find a police officer (civilian) ever wearing a safety belt while driving their cruisers around town? Sure would be interesting to see those "macho" detectives on TV buckle up before leaving.

SP4 Randy Quiring, USA
Ft. Benning, GA 31905

Serious injuries and deaths that could have been prevented by seat belts drive up everybody's insurance premiums and cost society a great deal of money in lifelong hospital care at taxpayer's expense, disability retirements, support of the dependents of those killed or disabled, etc. So far as police officers are concerned,

those with whom we work locally do use their belts. The California Highway Patrol says the lap belt is mandatory for their officers, although the shoulder belt is optional since in some cars it can catch on guns and other equipment.

Your comment about the use of belts by TV actors is interesting. Long, hard lobbying has succeeded in showing fewer cigarette smokers on television programs. Whether anybody is lobbying now for showing the routine use of restraints we don't know but we'd bet someone is.

GOLDIE?

I was reading your November issue of DRIVER magazine. One particular article caught my eye, not only because of its informative content but mainly because of the beautiful little blonde you used for the model for the "No Driving Under the Influence" emblems.

I say it's that dippy little blonde Goldie Hawn but my co-workers say it's not. Please settle this argument for us. I would deeply appreciate the information, since I'm a big fan of Goldie Hawn.

A1C Joe N. Williams, USAF
George AFB, CA 92392

We received quite a few letters and phone calls about this. The woman is a friend of our feature editor; she's not Goldie Hawn.

A LITTLE DAB'LL DO IT

I think your publication is tops. I am writing to add one small tip for backyard mechanics. I work part time in the base auto hobby shop and there is one easily avoidable problem I see all too often — frozen lug bolts/nuts. I've seen countless numbers of broken socket wrenches and stripped nuts and bolts. This can be easily avoided by greasing the bolt threads. This will also prevent being stuck on the side of the road with a non-removable wheel when you have a flat.

That's all — keep up the good work.

MSgt Robert N. Lewis, USAF
APO New York 09123

MISTAKES

I have enjoyed reading DRIVER for many years. It is consistently a valuable tool in vehicle safety.

I wish to point out an error in your October 1981 issue on studded tire laws as pertains to the state of Pennsylvania. The studded tire law in Pennsylvania has changed a couple of times in the past few years. Currently, Pennsylvania permits studded tires during the period 1 November through 31 March.

Keep up the excellent job. Best of luck to you and your staff in 1982.

Mr. Robert L. Lacher, USA
Pittsburgh, PA 15222

In addition to this error, the AAA information was wrong for South Dakota and California. These should have read "South Dakota – October 15-April 15," "California – November 1-April 1." We apologize for these errors.

SURVIVAL TESTING

Although I did agree with most of Sgt B.R. McCaskill's comments (December issue, Backfire), I do have a reply to his statement that "nowhere has there been proof that a helmet actually reduced death statistics among motorcyclists."

To convince you that the proof is on the roads, in the hospitals, and in the morgues, I propose a contest — a *survival* contest. You wear your bare head and I'll wear my helmet.

The first test is easy. You hit me square on the helmet as hard as you can with a baseball bat, then I do the same to you except I hit you square on your head, no helmet. Survive? Okay then, next test. You go first this time. I'll drop a 150 lb. slab of concrete (or pavement) from a distance that will allow it to smash your head at about 30 to 35 mph, or slower if you're getting cautious. If you go to the morgue (probably at taxpayer's expense) then I win; but if you go only to the hospital we'll skip the third, most dangerous test (on our bikes) and I'll concede your victory.

I'm not a "turkey" either, but I am a "chicken."

SSgt Bradley J. Witt, USAF
Luke AFB, AZ 85309

Any takers?

HAVE YOU EVER MET A MOTORCYCLIST YOU LIKED?

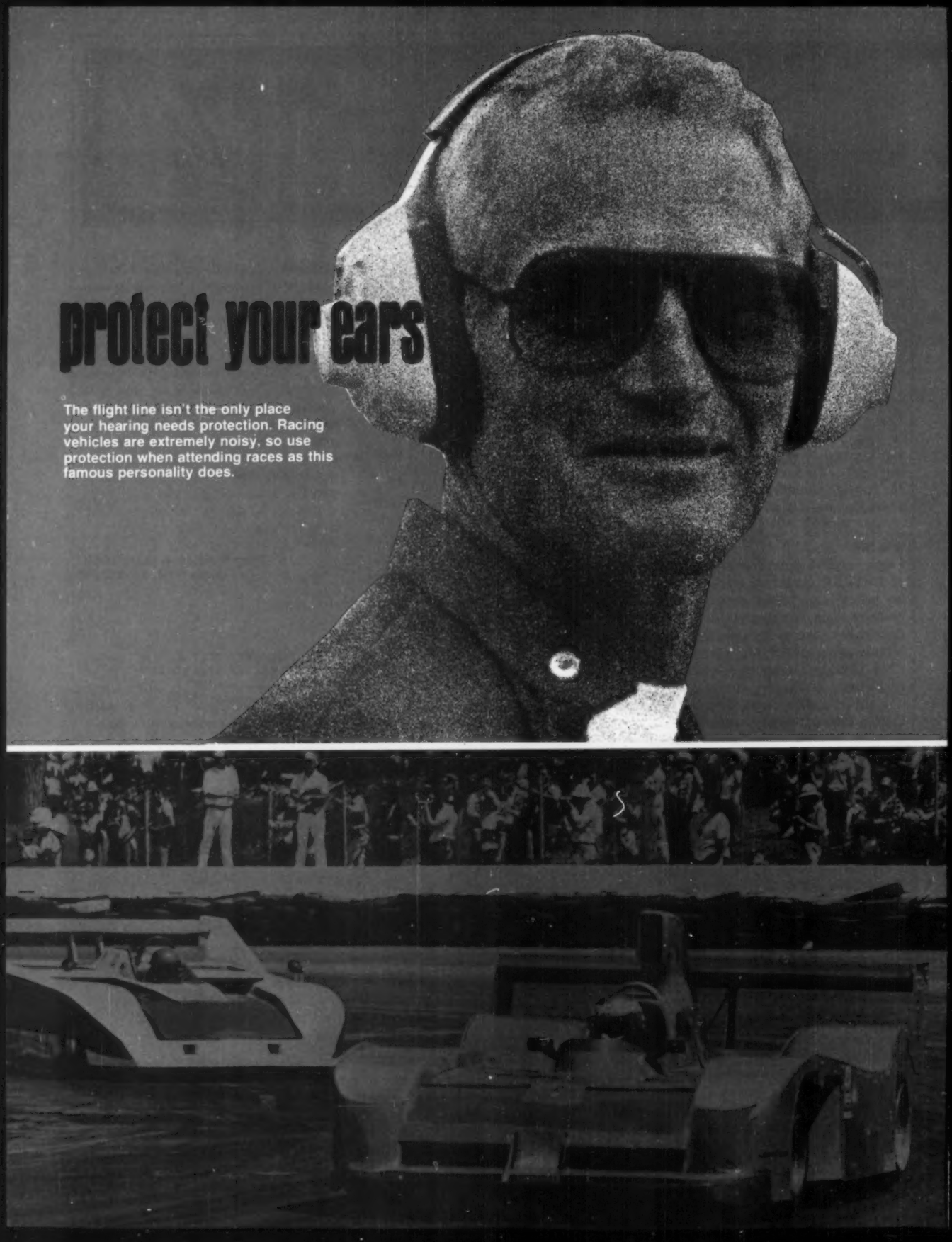
I really appreciated A.A. Stiff's letter (Sep. '81 DRIVER). I agree with A.A. that some motorcyclists cause accidents and are a nuisance, but perhaps because of some bad publicity in the past years about motorcycle riders everyone has gotten the impression that all riders are bad. Well as a rider myself, I can tell you that this is not so, and there are many riders who do great things for their community involving charity and welfare.

Perhaps we should remember that there are both bad automobile drivers and motorcyclists, as well as good ones. I think it is just great that A.A. realizes this, and I am sure with driver education and safety programs as well as publications like DRIVER, that others soon will too.

Sgt William P. Peranteau, USAF
Pease AFB, NH 03801

This is one of the few responses to Stiff's letter we can print. The others have been too profane!

☆U.S. GOVERNMENT PRINTING OFFICE: 1982 583—021/1003


protect your ears
The flight line isn't the only place your hearing needs protection. Racing vehicles are extremely noisy, so use protection when attending races as this famous personality does.